Digital Transformation's Impact on Open Innovation Challenges: A case study of Alice Waters' Open Innovation Ecosystem

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Abstract

A large proportion of sustainability issues are linked to our food systems. There are a range of innovators who are addressing these issues and promote more sustainable solutions. One innovator in particular, Alice Waters, has been at the forefront of this development for almost 50 years and has developed an open innovation ecosystem approach for food systems. This innovation ecosystem offers a prime context in which to study the impact of the digital transformation on open innovation. In this case study, we explore the young Chez Panisse and the current Edible Schoolyard through the lens of 24 open innovation challenges developed from Chesbrough and Appleyard (2007) and Van de Vrande et al. (2009). Our research illustrates the impact of digital transformation on a selection of the open innovation challenges and indicates avenues in which digital transformation can support the development and successful implementation of open innovation ecosystems. Thus, it can provide guidance to managers and entrepreneurs and lead to solutions to overcome open innovation challenges.

Introduction

Many sustainability issues are linked to our food systems. The food system is an ecosystem of actors, activities, environments, and their interrelations involved in food production and consumption. We adopt a triple bottom line view of sustainability that considers economic, environmental, and social value (Elkington, 1997; Yang et al., 2017). On an economic level, food systems dictate where we spend a significant amount of our income. They are also an important source of jobs—e.g., the food sector employs 70 percent of total employment in low-income countries globally (Townsend et al., 2017). Environmentally, food systems contribute to climate change and pollution. Animal husbandry alone may contribute almost 20 percent of global warming (Steinfeld et al., 2006). On a social level, food systems are critical for public health. Obesity, which we know is often related to unhealthy food consumption, has become an epidemic (Roberto et al., 2015).

These issues can be addressed through open innovation that promotes more sustainable food systems. However, there are generic open innovation challenges that may hinder innovation in this area. There is an emerging trend of digitalization that causes comprehensive transformations in a growing number of industries. This digital transformation has the potential to address some of the open innovation challenges. Despite this potential, both digital transformation in the food system and its influence on industrial sustainability remain underexplored. To address this gap, we focus our research on an innovator who has both been at the heart of an open innovation ecosystem promoting more sustainable food systems for almost 50 years and at the heart of a digital transformation to scale the open innovation ecosystem's impact.

In 1971, Alice Waters started the restaurant Chez Panisse, which has been recognized for its innovative restaurant approach and its significant influence on American culinary culture (Chesbrough et al., 2014). Chez Panisse has also been recognized as an example of an open innovation ecosystem, "a business ecosystem that co-creates innovations with its stakeholders and captures co-created values collectively within the ecosystem" (Kim, 2013). In 1996, Alice Waters founded the Chez Panisse Foundation to extend the reach of the Chez Panisse philosophy. In 2011, the Chez Panisse Foundation changed its name to the Edible Schoolyard, launching its edibleschoolyard.org website in 2012 (The Edible Schoolyard Project, 2018).

Alice Waters' evolving open innovation ecosystem offers a prime context in which to study the impact of the digital transformation on open innovation. We explore the young Chez Panisse and the current Edible Schoolyard through the lens of open innovation challenges. By observing the evolution of Alice Waters' open innovation ecosystem under the influence of the digital transformation, we can begin to draw conclusions about the influence of digital transformation on open innovation challenges. We seek to answer the following research question: How has the digital transformation made an impact on open innovation challenges in the context of Alice Waters' open innovation ecosystem?

Background

Open Innovation Challenges

There is no explicit collection of open innovation challenges in the literature. However, literature reviews on open innovation by Chesbrough and Appleyard (2007) and Van de Vrande et al. (2009) point to a range of issues, based on which, we develop and define 24 open innovation challenges, illustrated in Table 1. The term community in the table refers to the group of people that contribute to an open innovation project.

Table 1. Open innovation challenges and definitions

No.	Challenge	Definition	Identified in
1	Cognitive proximity	Degree of closeness to existing knowledge and knowledge acquisition capacity (Boschma, 2005)	van de Vrande et al., 2009
2	Community abandonment	The contributor community's abandonment of the project	Chesbrough and Appleyard, 2007

3	Community backlash	The contributor community's backlash against the project	Chesbrough and Appleyard, 2007
4	Community dissatisfaction	The contributor community's dissatisfaction with the trajectory of the project	Chesbrough and Appleyard, 2007
5	Community engagement	The contributor community's level of engagement with the project	Chesbrough and Appleyard, 2007
6	Community recruitment	The recruitment of the contributor community	Chesbrough and Appleyard, 2007
7	Competition	When adjacent areas of business are viewed in a less collaborative nature, and instead as opportunities to compete	Chesbrough and Appleyard, 2007
8	Contract issues	Difficulties related to contracts	van de Vrande et al., 2009
9	Contributor value capture	Concerns regarding how contributors to the open innovation project capture value (i.e., profit) from their engagement	Chesbrough and Appleyard, 2007
10	Corporate power	The power that large corporations have in comparison to contributing organizations and individuals	Chesbrough and Appleyard, 2007
11	Cultural proximity	Degree of closeness to individually held values; e.g., ethnic and religious values (Boschma, 2005)	van de Vrande et al., 2009
12	Free riding	Situation in which actors do not contribute their share in producing a good, however they receive the benefits of that good	van de Vrande et al., 2009
13	Institutional proximity	Degree of closeness to institutionally held values; e.g., common language, shared habits, established laws (Boschma, 2005)	van de Vrande et al., 2009
14	Limited contributor capacity	A lack of community contribution to the project due to a limited number of contributors or the limited availability of contributors	Chesbrough and Appleyard, 2007
15	Limited resources	Insufficient resources or a constraint on resources	van de Vrande et al., 2009
16	Not-invented-here syndrome	Negative attitude towards acquiring external products and knowledge (Lichtenthaler and Ernst, 2006)	van de Vrande et al., 2009
17	Only-used-here syndrome	Negative attitude towards the external exploitation of products and knowledge (Lichtenthaler and Ernst, 2006)	van de Vrande et al., 2009
18	Open innovation decision-making	How decisions regarding the open innovation agenda are made	Chesbrough and Appleyard, 2007
19	Open innovation leadership	How the open innovation project is led and managed	Chesbrough and Appleyard, 2007
20	Organizational proximity	Degree of closeness regarding the autonomy and control exercised in organizational environments (Boschma, 2005)	van de Vrande et al., 2009
21	Pressure to preform	Need to demonstrate the ability of initiatives to prosper and endure	Chesbrough and Appleyard, 2007
22	Sponsor resistance	Sponsor pushback against a particular decision	Chesbrough and Appleyard, 2007
23	Sustaining	Uphold the ideals that were used to guide the open	Chesbrough and

	original ideals	innovation project at the outset	Appleyard, 2007
24	Sustaining original institutions	Uphold the institutions that were used to support the open innovation project at the outset	Chesbrough and Appleyard, 2007

Alice Waters' early open innovation ecosystem

The young Chez Panisse is the restaurant at the center of Alice Waters' early open innovation ecosystem. We define the *young* Chez Panisse to be Chez Panisse within its first 20 years. Kim describes Chez Panisse as the birthplace for prominent figures of the fresh food movement in the United States (Kim, 2013). The young Chez Panisse was committed to serving the finest quality and seasonal food to its customers, and cultivating a nurturing and interesting workplace for its employees (Kim, 2013).

Alice Waters' present open innovation ecosystem

The Edible Schoolyard represents Alice Waters' present open innovation ecosystem. It is a foundation that encourages schools to bring food into the forefront of their curriculum. The Edible Schoolyard has a comprehensive website (edibleschoolyard.org) and an active Twitter account, as well as a Facebook page and additional presence on the web. Edibleschoolyard.org states:

> "The mission of the Edible Schoolyard Project is to build and share a national edible education curriculum for pre-kindergarten through high school.
>
> Edible education connects the experience of school to the real, lived experience of our students. It prioritizes access to the healthy food that underpins all other efforts to give children a strong start at school and in life." (The Edible Schoolyard Project, 2018).

Methodology

This research investigates how Alice Waters' open innovation ecosystem has embraced digital transformation, which has in turn influenced open innovation challenges. This provides insights into the underinvestigated phenomenon of how digital transformation impacts open innovation ecosystems. It also contributes to our knowledge on food systems and sustainability.

To do so, we employ the case study method, based on document and archival analysis, following the recommendations of Creswell (2014), Easterby-Smith (2015), Eisenhardt et al. (2007), and Yin (2014). Case studies are a research strategy that employs empirical descriptions of one or more instances of a phenomenon to derive propositions, models, or theories from empirical evidence, based on a variety of data sources (Eisenhardt, 1989; Ketokivi et al., 2014; Yin, 2014).

The case method is the most appropriate for this specific research because it essentially answers "*How"* research questions and because of its lack of control of behavioral events within the investigated organizations, and its focus on contemporary events in present or not long passed business model innovation processes (Yin, 2014). Therefore, in this research, we employ an in-depth single-case study based on the following data sources:

- Chez Panisse website
- Edible Schoolyard Project website
- Twitter accounts of Edible Schoolyard and its stakeholders
- Facebook Pages of Edible Schoolyard and its stakeholders
- Web presence of Edible Schoolyard and its stakeholders
- A doctoral thesis about Chez Panisse by Kim (2013)
- Chesbrough et al. (2014) Chez Panisse case study

We analysed the content of these sources with the assistance of the QSR NVivo qualitative data analysis software. Content analysis is a qualitative data analysis approach that draws inferences from data structured by conceptual frameworks (Easterby-Smith et al., 2015). It is recommended for the thematic interpretation of text documents by coding relevant extracts to describe patterns (Weber, 1990). We coded the data based on the lens of the 24 open innovation challenges established in the background section above.

We consider the young Chez Panisse to exemplify Alice Waters' open innovation ecosystem in the absence of a digital transformation, and the Edible Schoolyard to exemplify Alice Waters' open innovation ecosystem in the presence of digital transformation. We triangulated our analysis between the different data sources and the authors of the article to validate our findings and minimize bias.

Findings

The analysis of open innovation challenges in Alice Waters' open innovation ecosystem before and after the influence of digital transformation enabled the emergence of context-specific findings. We highlight a selection of these findings here, identifying the particular open innovation challenge that enabled each of the findings to emerge.

Community engagement

Community engagement was an expensive and time-consuming task for the young Chez Panisse. Kim describes how Pat Waters of Chez Panisse visited over 100 farms in the Sonoma Valley in order to build their community of collaborators who would share Chez Panisse's goals (Kim, 2013). The Edible Schoolyard demonstrates the use of online tools to engage its community of contributors. For example, edibleschoolyard.org is an attractive website with a variety of content to engage its open innovation contributors (e.g., Edible Schoolyard's story, videos, interactive map, downloadable lessons). Edibleschoolyard.org states that 5,510 programs have engaged with their network. The Edible Schoolyard Twitter account has 18,600 followers. This data suggests that digital transformation tools such as websites and social media platforms have lowered the barrier

to community engagement, and have potentially increased the speed at which a community can grow.

Contributor value capture

Contributor value capture in the young Chez Panisse primarily centered on employee wages, employee benefits, and revenue for suppliers. The Edible Schoolyard allows its contributors to capture value through access to a range of resources, and additionally through visible recognition on the website. The interactive map in edibleschoolyard.org's Network tab presents the 5,510 programs in the community, a tool that endorses and potentially increases awareness about those other programs. This data suggests that digital transformation tools such as websites and web searches support new mechanisms of capturing value for contributors, such as the program endorsement example provided.

Limited resources

This open innovation challenge lens prompted us to consider Alice Waters as a limited resource. Chesbrough et al. describe how in the young Chez Panisse, Alice Waters alone was the person specifying how dishes should be cooked and things should be done (Chesbrough et al., 2014). The descriptions of the young Chez Panisse evidence that the Chez Panisse vision was essentially restricted within Alice's head (Chesbrough et al., 2014; Kim, 2013). The Edible Schoolyard's website captures Alice Waters' genius and makes it accessible for all to enjoy. This data suggests that digital transformation tools such as websites have the power to extend limited resources and make them more accessible.

Sustaining original ideals

The ideals underlying Chez Panisse were tacitly understood in the early years. Alice Waters prioritized quality in the ingredients and the service. A staff meeting memo from 1982 appears to be the first written record of Chez Panisse's goals. While these goals were documented, there is no evidence to suggest that they were made visible and accessible to the open innovation community beyond the Chez Panisse staff. The Edible Schoolyard on the other hand has made its mission and vision extremely accessible through its publication on edibleschoolyard.org. The vision is prominent of the website's landing page: "We envision gardens and kitchens as interactive classrooms and a sustainable, delicious, and free lunch for every student" (The Edible Schoolyard Project, 2018). The data suggests that digital transformation tools such as websites and the associated expectation to include vision and mission statements encourage ventures to visibly articulate their ideals.

Discussion and conclusion

In this research we have analyzed the young Chez Panisse and the Edible Schoolyard through the lens of 24 open innovation challenges. We have presented a selection of findings that emerged from the analysis using 4 of the open innovation challenges.

The case study data suggests that in the context of Alice Waters' open innovation ecosystem, digital transformation tools:

- Have lowered the barrier to community engagement, and have potentially increased the speed at which a community can grow
- Support new mechanisms of capturing value for contributors
- Have the power to extend limited resources and make them more accessible
- Encourage ventures to visibly articulate their ideals

These four findings indicate avenues in which digital transformation can support the development and successful implementation of open innovation ecosystems, and more specifically overcome open innovation challenges related to community engagement, contributor value capture, limited resources and sustaining original ideals. These findings provide guidance to managers and entrepreneurs and lead to solutions to overcome open innovation challenges.

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